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ABSTRACT

Minimized Wave-zone Buoyancy is a new approach to oil and gas platform design with superior construction and performance characteristics compared to state-of-art off-shore drilling and production platforms. Minimized Wave-zone Buoyancy platforms capitalize on low cross sectional area of the portion of the platform exposed to waves. The low cross sectional area reduces buoyancy forces that result from vertical platform movement, enabling the platform to oscillate at a low natural frequency. The low cross sectional area also minimizes the cyclical vertical forces induced by waves. Compare to current designs, application of the Minimized Wave-zone Buoyancy concept will result in a lower natural frequency of oscillation, lower overall weight of platform, or both. Minimized Wave-zone Buoyancy offers an attractive alternative with improved platform stability, fatigue considerations, lower construction and installation costs, and shorter implementation schedule.